

CLAIMS

What is claimed is:

1. A gas spring comprising:
a piston cylinder;
a rod which moves a piston within said piston cylinder along an axis to define a working volume;
an outer cylinder mounted about said piston cylinder and coaxial to said axis to define an auxiliary volume; and
a temperature compensation valve mounted within said piston cylinder to selectively communicate said working volume with said auxiliary volume in response to a predetermined temperature.
2. The gas cylinder as recited in claim 1, wherein said auxiliary volume extends along the length of said piston cylinder.
3. The gas cylinder as recited in claim 1, wherein said auxiliary volume comprises a multiple of auxiliary volumes.
4. The gas cylinder as recited in claim 1, further comprising a partition defined between said piston cylinder and said outer cylinder to separate said auxiliary volume into a multiple of auxiliary volumes, said partition defined along a length of said piston cylinder.
5. The gas cylinder as recited in claim 1, wherein each of said multiple of auxiliary volumes communicates with a volume defined by a temperature compensation valve within said piston cylinder.

6. A gas spring comprising:
 - a piston cylinder;
 - a rod which moves a piston within said piston cylinder along an axis to define a working volume;
 - an outer cylinder mounted about said piston cylinder and coaxial to said axis to define a first auxiliary volume, a second auxiliary volume, and a third auxiliary volume between said piston cylinder and said outer cylinder;
 - a first temperature compensation valve mounted within said piston cylinder said working volume with said first auxiliary volume in response to a first predetermined temperature;
 - a second temperature compensation valve mounted within said piston cylinder and adjacent said first temperature compensation valve to selectively communicate said working volume with said second auxiliary volume in response to a second predetermined temperature; and
 - a third temperature compensation valve mounted within said piston cylinder and adjacent said second temperature compensation valve to selectively communicate said working volume with said third auxiliary volume in response to a third predetermined temperature.
7. The gas cylinder as recited in claim 6, wherein said first auxiliary volume, said second auxiliary volume, and said third auxiliary volume extend along the length of said piston cylinder.

8. The gas cylinder as recited in claim 6, wherein said first auxiliary volume is greater than a volume defined between said first and second temperature compensation valves, said second auxiliary volume is greater than a volume defined between said second and third temperature compensation valves, and said third auxiliary volume is greater than a volume defined between said third temperature compensation valve and a closed end of said piston cylinder.
9. The gas cylinder as recited in claim 6, wherein said first auxiliary volume, said second auxiliary volume, and said third auxiliary volume are sequentially communicated with said working volume.
10. The gas cylinder as recited in claim 6, wherein said first auxiliary volume, said second auxiliary volume, and said third auxiliary volume are sequentially communicated together.
11. The gas cylinder as recited in claim 6, wherein said piston cylinder defines a first passage, a second passage, and a third passage which respectively communicates said working volume with first auxiliary volume, said second auxiliary volume, and said third auxiliary volume.
12. The gas cylinder as recited in claim 6, wherein said piston cylinder defines a first passage, a second passage, and a third passage which respectively communicates said working volume with first auxiliary volume, said second auxiliary volume, and said third auxiliary volume, said first second and third passage radially separated about said piston cylinder.